IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Application :
Pagano, et al. :
: Examiner: Sharmila Gollamudi
Serial No. 09/843,000 :
: Art Unit: 1616
Filed: April 26, 2001 :
:
For : NAIL ENAMEL COMPOSITIONS, RELATED :
METHODS AND A TWO COMPONENT :
KIT FOR PAINTING THE NAILS :
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DECLARATION OF ANJALI PATIL (37 C.F.R. §1.132)

1. I am a co-inventor of the above-mentioned patent application.

2. I have a Ph.D. in polymer chemistry, obtained from the Indian Institute of Technology in Bombay, India, in 1982. I have been employed by Revlon since 1992, conducting research and development in cosmetic products containing novel polymers. Prior to my experience at Revlon I worked for certain companies and universities in the development of new polymers and the study of polymeric structures.

3. Under my direction and control four different compositions were prepared according to Example 6 of Perronin, U.S. Patent No. 3,991,007, using a copolymer comprised of 80 parts methyl methacrylate and 20 parts acrylic acid (Formula 1), 85 parts methyl methacrylate and 15 parts acrylic acid (Formula 2), 80 parts butyl methacrylate and 20 parts acrylic acid (Formula 3), and 85 parts butyl methacrylate and 15 parts acrylic acid (Formula 4) as taught in Perronin. The tested formulas were as set forth below:

Material	Formula 1	Formula 2	Formula 3	Formula 4
Nitrocellulose Resin	7.9%	7.9%	7.9%	7.9%
Butyl Acetate	7.9%	7.9%	7.9%	7.9%

Ethyl Acetate	38.8%	38.8%	38.8%	38.8%
Butanol	4.1%	4.1%	4.1%	4.1%
Isopropanol	28.7%	28.7%	28.7%	28.7%
Butyl Phthalate	5.2%	5.2%	5.2%	5.2%
Pigment	3.7%	3.7%	3.7%	3.7%
MMA/AA (80/20)	3.7%	-	-	-
MMA/AA (85/15)	-	3.7%	-	-
BMA/AA (80/20)	-	-	3.7%	-
BMA/AA (85/15)	-	-	-	3.7%

The compositions were tested using two tests commonly used to test the integrity and properties of nail enamel films as set forth below.

Paints and Varnishes -- Pendulum Damping Test -ANS/ISO 1522 – 1998(E)

A copy of this test method was submitted with previous declaration.

A pendulum resting on a coating surface is set into oscillation and the time for the oscillation amplitude to decrease by a specific amount is measured. The shorter the damping time, the lower the hardness of the film.

A 6 mil wet film of each of the three compositions was drawn down on a separate glass plate. The resulting films were evaluated for film hardness over the period of 7 Days using a pendulum hardness tester equipped with a König Pendulum (see Section 5.1.1 of the test method). The readings were then taken at the elapsed time intervals of 1h, 2h, 4h, 24h, and 7 days after the films were drawn down. For example, at 1 hour after film draw down, for composition 1, the König pendulum tester was activated according to Section 5.1.1 in the test method. The amount of time required for the pendulum to deflect from 6° to 3° was noted, in this case for Formula 1 was 72 seconds. The results of the other readings are tabulated below with the time in seconds noted for the pendulum to deflect from an initial angle of 6° to a final angle of 3° when measured at the time interval noted. This time period is detected by means of

an automatic counter equipped with light barriers. The higher the time period the harder the film. A lower time period indicates a film that has lesser hardness.

In commercial nail enamel compositions, films that are too hard will be brittle, and crack and chip very readily.

Pendulum Hardness Data:

Elapsed Time	Formula 1	Formula 2	Formula 3	Formula 4
1h	72 sec	77 sec	45 sec	50 sec
2h	72 sec	83 sec	46 sec	55 sec
4h	77 sec	81 sec	47 sec	52 sec
24h	76 sec	81 sec	49 sec	56 sec
7 Days	76 sec	81 sec	48 sec	54 sec

Mandrel Flex Test (Modification of ASTM D 522-93a)

The Mandrel Flex Test conducted was a modification of the above mentioned ASTM method. A copy of that method was submitted with previous declaration. Our modifications made the test more suitable for use in ascertaining the commercial acceptability of nail enamel films.

For each of the four compositions, a 3 mil wet film of each composition was drawn down on a sheet metal plates of 0.3 mm in thickness. After 24 hrs, the plates were placed on a 1/8" cylindrical mandrel and then bent approximately 180° around the mandrel as set forth in the test method. The resulting plate was then bent back to being flat. The plate was placed again on the

same diameter mandrel in the same area of the film and bent 180° again. This process of bending/flattening was repeated 10 times.

After 3 days the bend test was then repeated again over the 1/8" mandrel in the same area of the film previously tested, then flattened out for ten occurrences.

Cracking and Chipping in the region bent over the mandrel flex test demonstrates that the coating was not commercially acceptable for use in nail enamel.

Mandrel Flex Data:

Elapsed Time	**Formula 1**	**Formula 2**	**Formula 3**	**Formula 4**
24h (10 Bends)	OK	Cracking/Chipping observed after 3 bends	OK	OK
3 Days (1 Bend)	OK	-	OK	OK
3 Days (10 Bends)	Chipping observed after 9 bends	-	OK	OK

Considering the results of both tests, films that demonstrate poor flexibility due to being too brittle do not wear well on the nail. If a nail enamel is commercially acceptable it will not crack when this test is performed.

4. Conclusion: The above test results demonstrate that the nail enamel films prepared using the BMA/AA copolymers of the invention provide improved results when compared to those of Perronin. The BMA/AA films are more commercially acceptable because they do not crack, chip, or exhibit other imperfections when subjected to the standard tests conducted to determine commercial acceptability of nail enamel films.

5. This declaration is made with the knowledge that willful false statements and the like are punishable by fine or imprisonment or both under 35 U.S.C. §1001, and may jeopardize the validity of the above identified patent application or patent issuing therefrom.

August 2, 2007.
Date

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